

CLAIM OR CLAIMS

1. A method for preparing a thin supported film on a metal substrate having two surfaces, the method comprising:

- a. masking off a first surface of the metal substrate with a maskant, leaving a second surface of the metal substrate unmasked;
- b. placing the metal substrate under a vacuum;
- c. treating the second unmasked surface of the metal substrate by plasma etching;
- d. coating the treated second surface of the metal substrate with a film while still under vacuum;
- e. removing the metal substrate from the vacuum;
- f. removing the maskant;
- g. treating the previously masked second surface of the metal substrate with photo resist;
- h. exposing the treated second surface of the metal substrate with photo resist to artwork of a desired pattern;
- i. exposing the metal substrate to a suitable solution;
- j. creating at least one etched part of the metal substrate by chemically etching in areas selectively exposed by the artwork;
- k. neutralizing the metal substrate; and
- l. removing the at least one etched part of the metal substrate.

2. The method of Claim 1, wherein the metal substrate is stainless steel.

3. The method of Claim 1, wherein the metal substrate is brass copper.

4. The method of Claim 1, wherein the metal substrate is silicon.

5. The method of Claim 1, wherein the maskant is tape.

6. The method of Claim 1, wherein the maskant is liquid film.

7. The method of Claim 1, wherein the maskant is resist.

8. The method of Claim 1, wherein the maskant is wax.

9. The method of Claim 1, wherein the thin supported film is produced by plasma arc deposition.

10. The method of Claim 1, wherein the thin supported film is produced by vapor deposition.

11. The method of Claim 1, wherein the thin supported film is parylene.

12. A thin supported film on a metal substrate having two surfaces created by a method comprising:

a. masking off a first surface of the metal substrate with a maskant, leaving a second surface of the metal substrate unmasked;

b. placing the metal substrate under a vacuum;

c. treating the second unmasked surface of the metal substrate by plasma etching;

d. coating the treated second surface of the metal substrate with a film while still under vacuum;

e. removing the metal substrate from vacuum;

f. removing the maskant;

g. treating the previously masked second surface of the metal substrate with photo resist;

h. exposing the second surface of the metal substrate treated with photo resist to artwork of a desired pattern;

i. exposing the metal substrate to a suitable solution;

j. creating at least one etched part of the metal substrate by chemically etching in areas

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selectively exposed by the artwork;

k. neutralizing the metal substrate; and

l. removing the etched parts from the metal substrate.

13. The thin supported film on the metal substrate of Claim 12, wherein the metal substrate is stainless steel.

14. The thin supported film on the metal substrate of Claim 12, wherein the metal substrate is brass copper.

15. The thin supported film on the metal substrate of Claim 12, wherein the metal substrate is silicon.

16. The thin supported film on the substrate of Claim 12, wherein the maskant is tape.

17. The thin supported film on the substrate of Claim 12, wherein the maskant is liquid film.

18. The thin supported film on the substrate of Claim 12, wherein the maskant is resist.

19. The thin supported film on the substrate of Claim 12, wherein the maskant is wax.

20. The thin supported film on the substrate of Claim 12, wherein the thin supported film is produced by vapor deposition.

21. The thin supported film on the substrate of Claim 12, wherein the thin supported film is produced by plasma arc deposition.

22. The thin supported film on the substrate of Claim 12, wherein the thin supported film is parylene.

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